

# SURFACE-MOUNT TYPE ANTENNA AND ANTENNA APPARATUS

## BACKGROUND OF THE INVENTION

### 1. Field of the Invention

The present invention relates to a surface-mount type antenna which is a compact antenna, and an antenna apparatus for use in mobile communication apparatus such as a cellular phone.

### 2. Description of the Related Art

Recently, in keeping with rapid advancement of down-sized, lightweight, and high-performance mobile communication equipment such as a cellular phone, miniaturization and high performance have come to be increasingly demanded of an antenna which constitutes such equipment. To meet such demands, for example, a surface-mount type antenna has hitherto been developed.

Now, a surface-mount type antenna of conventional design and an antenna apparatus incorporating the antenna will be described with reference to a perspective view shown in Fig. 10.

In Fig. 10, reference numeral 200 represents a surface-mount type antenna. The surface-mount type antenna 200 is mounted on a mounting substrate 210, thus constituting an antenna apparatus 220. In the surface-mount type antenna 200